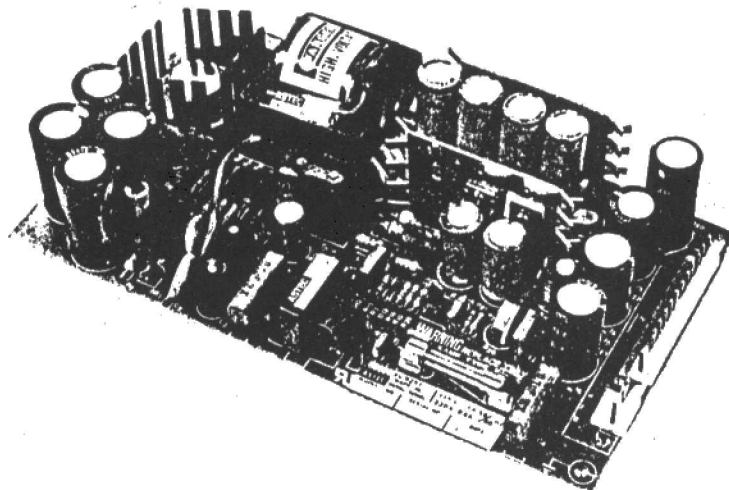


Interak 1

ASSEMBLED
PSU

Assembled High Output Switch-Mode Power
Supply Unit Multi-Rail With Protection



Features

- * 50 Watt total output.
- * Outputs +5V/6A(4A), -5V/0.5A, +12V/1A(2A) and -12V/1A.
- * Low output ripple.
- * Typically 20 ms hold up time at full load.
- * High efficiency (typically 70% at full load).
- * Outputs current limited.
- * Crowbar overvoltage protection on +5V output.
- * Low Electromagnetic Interference (meets VDE 0871 'A' rules).
- * Vacuum Impregnated Transformers.
- * 100% Thermal Cycle and burn in - high reliability.
- * Designed for MTBF greater than 50,000 hours when operated at full load and an ambient temperature of 25 deg C.
- * Input Voltage Range 90-135V A.C. on 115V setting.
- * Input Voltage Range 180-270V A.C. on 230V setting.
- * Open Card Construction.
- * 7.75" x 4.25" x 2.0" approx.
- * Fits conveniently at rear of Interak Card Frame.

DESCRIPTION

An open card construction is employed for the Interak AC9251 PSU. When used with the PSU mounting kit it fits conveniently at the rear of the 19"x3U card frame.

The power supply module produces +5V/6A(4A), -5V/0.5A, +12V/1A(2A) and -12V/1A from an input of 230V (i.e. 180V-270V AC). Total not to exceed 50W.

The figures in brackets show an important feature of this power supply in that 2 amps can be drawn from the +12 volt rail so long as no more than 4 amps is drawn from the +5 volt rail.

This power supply is not suitable for general use (ie. non-computer use) as the output voltages are only guaranteed over a relatively narrow range of output currents. ie a minimum of approximately 1 amp should be drawn from the +5 volt rail to ensure correct regulation.

HIGH EFFICIENCY

The Interak AC9251 is a switch mode power supply which has the advantages of high efficiency (typically 70% at full load) combined with very low heat output. The circuit has 100% Thermal Cycle and burn in which explains the high reliability.

SYSTEM PROTECTION

A fundamental requirement for a power source is that no damage to the system it powers shall occur due to a fault arising in the power source. A basic protection is provided by equipping the power supply with an overvoltage crowbar protection trip circuit on the 5V. output, this is designed to trip if the output voltage exceeds the rated voltage by a predetermined amount (such a condition may arise from a control circuit failure).

Current limiting circuitry holds the maximum current that may be taken from any of the power supply outputs to the rated levels, in addition a thermal trip switch is incorporated to shut down the power supply should a fault condition occur that might cause an excessive rise in temperature.

All the protection circuitry resets once the fault condition has been corrected.

EMI/RFI ASPECTS

Generally there are three types of electrical noise which must be considered when a switch mode power supply is produced:

- (i) Noise reflected back to the AC line input.
 - (ii) Noise radiated from the power supply.
 - (iii) Noise appearing on d.c. outputs.
- (i) A complex capacitor/inductor combination is fitted between the line input and the bridge rectifier to inhibit noise being reflected back to the line.
 - (ii) To minimise radiated noise wound components are carefully screened and great attention is paid to physical layout of components and PCB tracks.
 - (iii) The outputs of the power supply are filtered using double section \sim filters. Ferrite cored chokes are used in series with the outputs. Reservoir capacitors are also incorporated to remove low frequency noise or ripple. In general the ripple and noise on the d.c. outputs will be less than 50mV or 1% of output voltage.

LOADS

Switch-mode power supplies are designed to operate into known loads. Normally the load should lie in the region of 25% and 100% of maximum rated load, except in special circumstances.

SAFETY

This power supply is intended for use in an Interak System. The PSU must be enclosed so that the user does not have any chance of accidentally touching the circuit board, tracks, components or terminals. The deluxe metal case is suitable for this purpose.

ORDERING INFORMATION

	order code	price ex VAT
The power supply should be ordered as:	AC9251	55.00
The power supply mounting kit should be ordered as:	PSMK1	7.50
Contents of PMK1:	Drilled aluminium plate. Threaded spacers nuts hexbolts washers and screws.	

See also the PSD1-BDS (Power Supply Distribution Board) data sheet for connecting leads etc.